

## **EXHIBIT A**

**Sunrise Technologies, Inc. v. CIMCON Lighting, Inc.  
C.A. No. 1:15-cv-11545  
United States District Court  
District of Massachusetts**

**Hearing of November 20, 2017  
United States Patent No. 7,825,793**

**Defendant/Counterclaim-Plaintiff CIMCON Lighting, Inc.'s  
Technology Tutorial and Markman Presentation**



## Technology Tutorial – The Invention Combines Two Well Known Technologies

### *Pre-existing technologies: Transceivers and mesh networks*

This invention is a combination and interconnection of two existing technologies; mesh networks, and low-power, low-cost transceivers. The invention allows a person (an “end user” such as a city electrical worker) to monitor and/or control certain events (such as municipal electrical use) that are occurring in a remote location (such as any particular house), with an end user device (such as a domestic electrical use meter and associated communications device).

<sup>793 Patent at 3:36-43</sup>

## Technology Tutorial - Transceivers

### *Pre-existing technologies: Transceivers and mesh networks*

home. The unit produces a radio signal representative of the electrical use within the house (including an identifier or address of the particular unit. The signal reaches out to the street in front of the house. In existing technology, a utility vehicle provided with an appropriate unit can pick up the signal as the vehicle passes by the house and thereby measures the electrical use of the house for appropriate billing.

'793 Patent at 4:20-35

## Technology Tutorial - Mesh Network

### *Pre-existing technologies: Transceivers and mesh networks*

There are devices available that fit into a NEMA Locking 3 Pole Receptacle that perform communications for street light diagnostic information and other electric utility system monitoring/alarm/control information. The presently available devices use proprietary wireless platforms to transmit data through mesh networks of like devices. The transmitted data would be sent to a server for end user access. This would typically be done through telephone, fiber, WiFi, or cell phone frequency connections.

'793 Patent at 11:22-30

## Technology Tutorial - ZigBee

### ***Pre-existing technologies: Transceivers and mesh networks (ZigBee)***

There are devices available that utilize the IEEE 802.15.4 standard for mesh network communications for applications including but not limited to electric, gas, and water meter reading, industrial control/monitoring, hospital/patient monitoring, and residential applications.

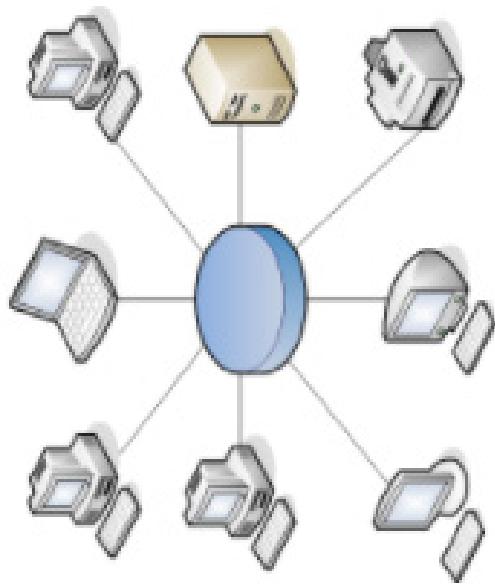
ZigBee is the industry name for a specification for a suite of high level communication protocols using small, low-power digital radios based on the IEEE 802.15.4 standard for wireless personal area networks (WPANs).



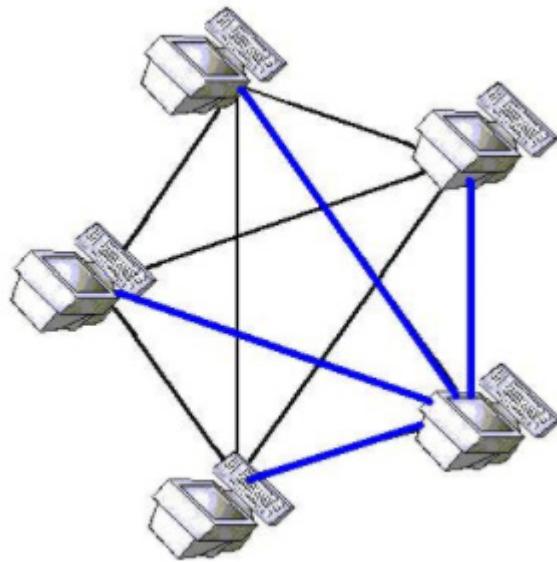
'793 Patent at 11:31-39

## ***Technology Tutorial - Mesh Network***

### **Local Area Network (“LAN”)**



### **Mesh Network**



## Technology Tutorial

### The '793 Patent

This invention involves taking the ZigBee standard to the next level, that is, integrating it with a wide-area mesh of interconnected communication nodes ideally located to communicate with low-cost, short range ZigBee or other 802.15.4 AMR/TOU meters or other local devices. By integrating the local ZigBee devices with the nodes on the wide-area mesh, the ZigBee devices can indirectly communicate over a wide area including communication with global computer networks such as the Internet.

'793 Patent at 5:55-6:3

## Technology Tutorial

### The '793 Patent

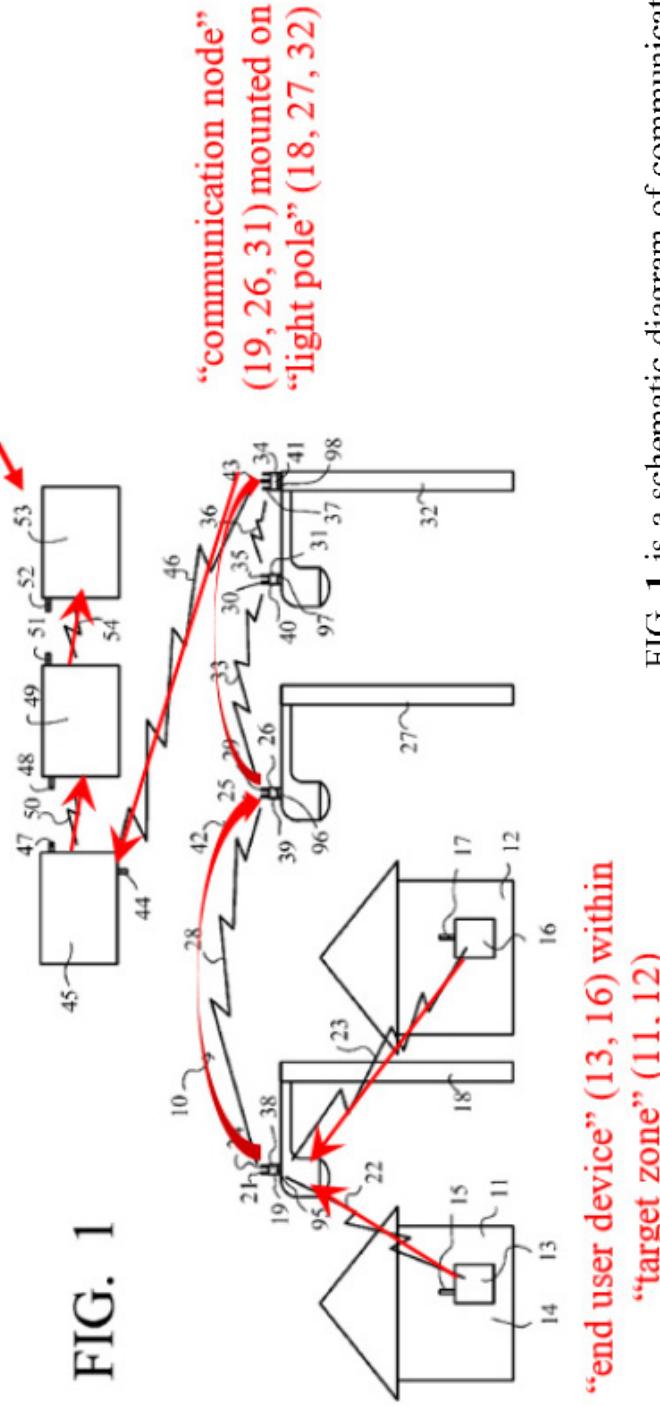
In this way, the present invention could receive the existing transmission from the existing proprietary target zone hardware, and communicate the signal to the end-user for translation of the signal by an existing proprietary receiving device, and the current invention would not need to read or decrypt the signal. Thus, the communication network of the present invention would simply provide an improvement by elimination of the need for a “drive-by” vehicle.

'793 Patent at 14:41-48

## Technology Tutorial

### The '793 Patent

FIG. 1



“end user device” (13, 16) within  
“target zone” (11, 12)

FIG. 1 is a schematic diagram of communication system for monitoring and controlling a target site by a remote end user embodying the principles of the present invention, '793 Patent at 3:17-20

## Technology Tutorial

### The '793 Patent

An embodiment of the present invention avoids the need for the “drive-by” reading concept of this existing technology, while preserving the value of both the installed existing transmitter and the existing receiver of the prior technology. The local node of the present invention could be provided with a radio receiver capable of picking up the radio signals produced by the already-installed adjacent proprietary transmitter radios of the existing system.

\*793 Patent at 14:22-29

## Claim Construction – Relevant Legal Principles

- “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*).
- “Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. . . . The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998) (citations omitted), adopted by *Phillips*, 415 F.3d at 1316.
- See, e.g., *Gemalto S.A. v. HTC Corp.*, 754 F.3d 1364, 1369 (Fed. Cir. 2014) (rejecting claim construction that broadened the claim to encompass “a defining feature of prior art . . . that the patented invention was designed to eliminate,” and interpreting claim consistent with “the entire purpose of the invention” as described in the specification).

## *Disputed Terms For Construction*

### **Group 1:**

- “end user device”
- “employs a ZigBee protocol to communicate outside of the target zone”

### **Group 2:**

- “actuator”
- “interact with”

### **Group 3:**

- “target zone”
- “within”
- “adjacent”

### **Group 4:**

- “end user”
- “end user adapted to communicate”

## Group 1

Claim Term	CIMCON's Construction	Sunrise's New Construction
“end user device”	“a device configured to communicate with a remote end user through at least one communication node mounted on a street light pole”	No construction necessary Alternatively: “a device that collects information about a local parameter”
“employs a ZigBee protocol to communicate outside of the target zone”	“adapted to transmit a ZigBee signal to the communication node”	No construction necessary Alternatively: “use a ZigBee protocol to broadcast information <u>for which the end user is the final intended recipient</u> ”

## ***“end user device”***

### **CIMCON: “a device configured to communicate with a remote end user through at least one communication node mounted on a street light pole”**

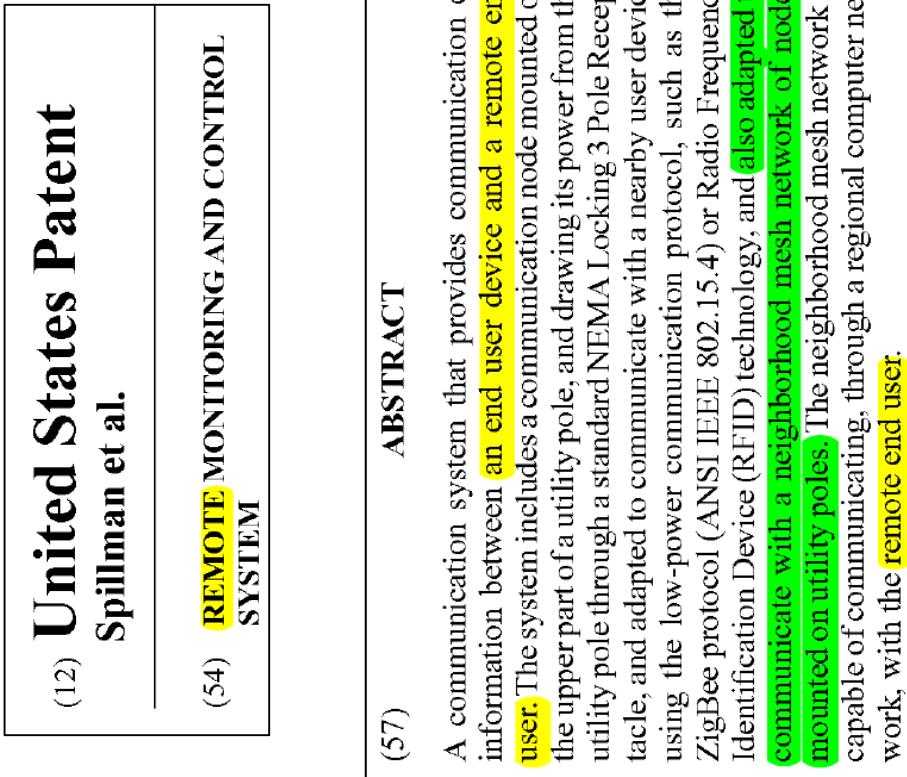
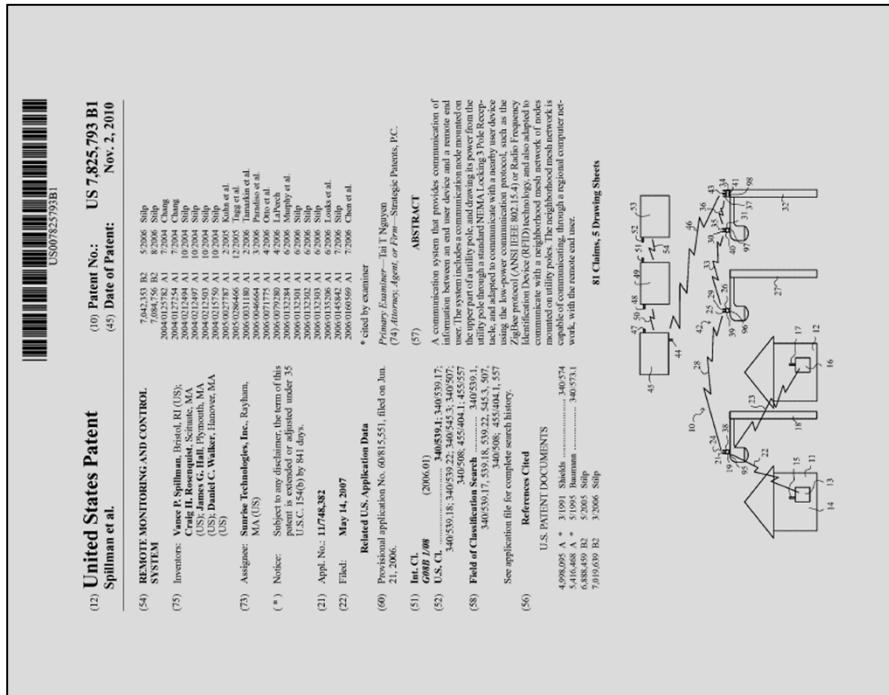
1. A communication system that provides communication of information related to a local parameter within a target zone, between an end user device located in the target zone and an end user, comprising:
  - a. the end user device within the target zone, comprising an actuator adapted to interact with the local parameter within the target zone, and a low-power-consumption communicator that has a unique communication address and is adapted to communicate with the actuator and adapted to communicate outside of the target zone using a wireless protocol, wherein the low-power-consumption communicator of the end user device employs a ZigBee protocol to communicate outside of the target zone,
  - b. a communication node mounted on an upper part of a street light pole adjacent the target zone and drawing electric power from the street light pole, and adapted to communicate with the low-power consumption communicator of the end user device using the wireless protocol, and adapted to communicate with the end user, the communication node including a watchdog function that monitors an operation of the communication node and resets the communication node if the communication node malfunctions, and the communication node providing photo control to a street light coupled to the street light pole to turn the street light on during darkness, and
  - c. the end user adapted to communicate the information with the communication node and thereby communicate the information with the end user device.

***“end user device”******CIMCON: “a device configured to communicate with a remote end user through at least one communication node mounted on a street light pole”***

1. A communication system that provides communication of information related to a local parameter within a target zone, between an end user device located in the target zone and an end user, comprising:
  - a. the end user device within the target zone, comprising an actuator adapted to interact with the local parameter within the target zone, and a low-power-consumption communicator that has a unique communication address and is adapted to communicate with the actuator and adapted to communicate outside of the target zone using a wireless protocol, wherein the low-power-consumption communicator of the end user device employs a ZigBee protocol to communicate outside of the target zone,
  - b. a communication node mounted on an upper part of a street light pole adjacent the target zone and drawing electric power from the street light pole, and adapted to communicate with the low-power consumption communicator of the end user device using the wireless protocol, and adapted to communicate with the end user, the communication node including a watchdog function that monitors an operation of the communication node and resets the communication node if the communication node malfunctions, and the communication node providing photo control to a street light coupled to the street light pole to turn the street light on during darkness, and
    - c. the end user adapted to communicate the information with the communication node and thereby communicate the information with the end user device.

**"end user device"**

**CIMCON:** “a device configured to communicate with a remote end user through at least one communication node mounted on a street light pole”



## ***“end user device”***

**CIMCON:** “*a device configured to communicate with a remote end user through at least one communication node mounted on a street light pole*”

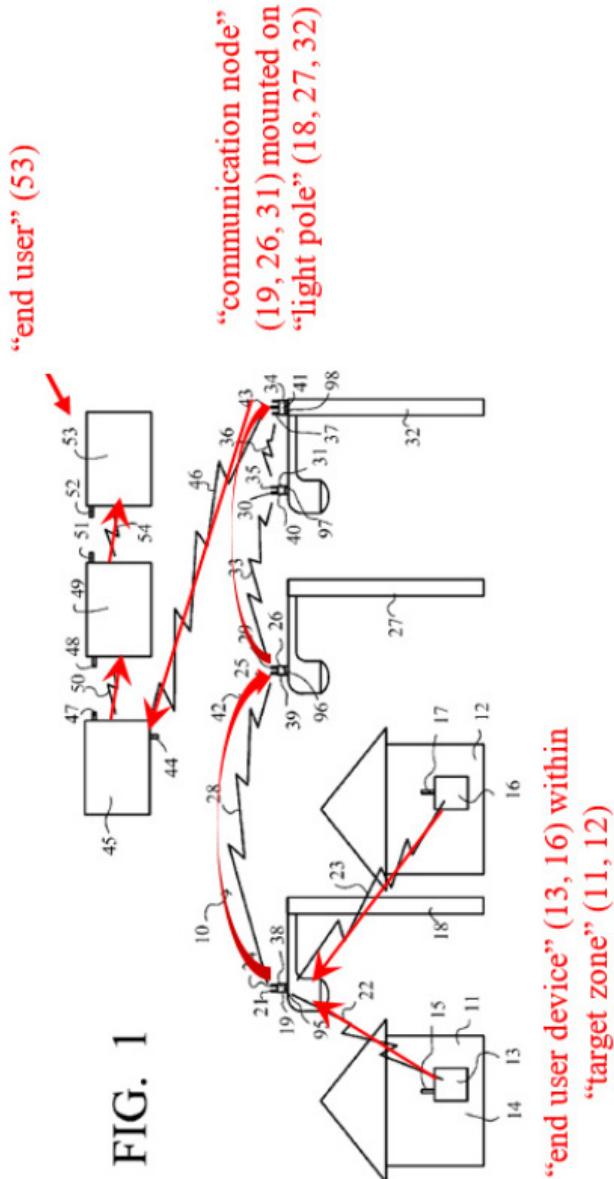


FIG. 1

## ***“end user device”***

**Sunrise contends that “the end-user device communicators do not communicate directly with the node but instead are ‘part of a transponder local area network (LAN) within the building and the LAN includes a gateway that communicates with the light pole device.”’ Sunrise Br. at 9 (citing ‘793 Patent at 5:25-32).**

**However, claim 1 requires the end user device to communicate with the communication node. Moreover, in the embodiment Sunrise identifies the “end-user device” is part of the LAN, and the LAN is inside of the target zone.**

cally mentioned and preferred. Furthermore, the topology below the light pole device could take several forms. One embodiment would involve each transponder communicating directly with the light pole device. In another embodiment, the transponders could be part of a transponder local area network (LAN) within the building and the LAN includes a gateway that communicates with the light pole device. The transponder LAN could be a mesh network, or it could be a more conventional network topology such as a star network. These various choices and their permutations and combinations could result in a large number of very different topographies at the building level.

Element 100 represents the ZigBee end user device 19 that will be given a communication address. It may include multiple addresses that are part of a WPAN (Wireless Personal Area Network). It will perform a function(s) for the end user 53’s purposes. It could send and/or receive information. The end user device 19 may also be a RFID (Radio Frequency Identification) device that does not use ZigBee communications technology.

‘793 Patent at 9:18-21

The street light nodes could recognize multiple end user devices’ addresses (end user devices may consist of a Wireless Personal Area Network (WPAN) with multiple addresses).

‘793 Patent at 12:6-9

‘793 Patent at 5:25-32 (cited by Sunrise)

***“employs a ZigBee protocol to communicate outside of the target zone”***

**CIMCON: “adapted to transmit a ZigBee signal to the communication node”**

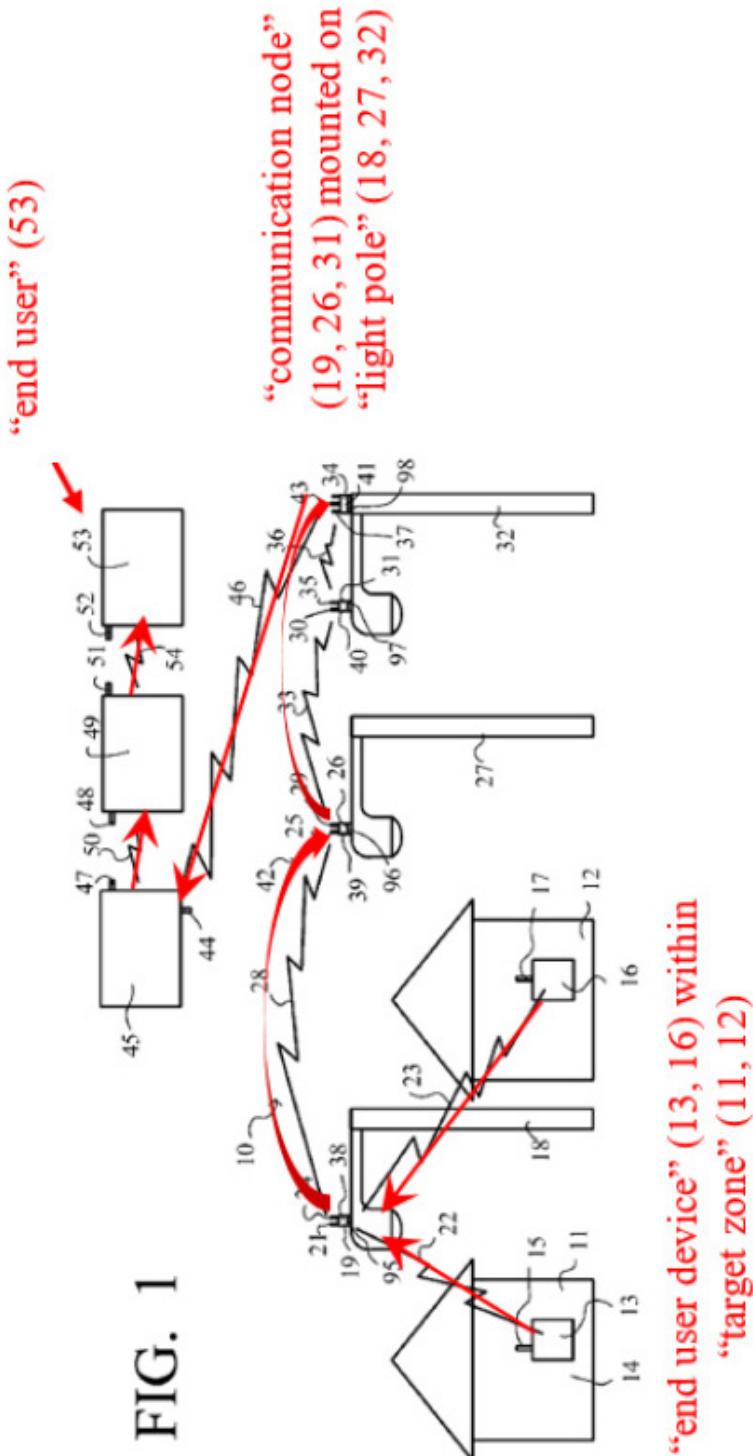
1. A communication system that provides communication of information related to a local parameter within a target zone, between an end user device located in the target zone and an end user, comprising:
  - a. the end user device within the target zone, comprising an actuator adapted to interact with the local parameter within the target zone, and a low-power-consumption communicator that has a unique communication address and is adapted to communicate with the actuator and adapted to communicate outside of the target zone using a wireless protocol, wherein the low-power-consumption communicator of the end user device employs a ZigBee protocol to communicate outside of the target zone,
  - b. a communication node mounted on an upper part of a street light pole adjacent the target zone and drawing electric power from the street light pole, and adapted to communicate with the low-power consumption communicator of the end user device using the wireless protocol, and adapted to communicate with the end user, the communication node including a watchdog function that monitors an operation of the communication node and resets the communication node if the communication node malfunctions, and the communication node providing photo control to a street light coupled to the street light pole to turn the street light on during darkness, and
  - c. the end user adapted to communicate the information with the communication node and thereby communicate the information with the end user device.

**The parties agree that “the wireless protocol” refers to “the ZigBee protocol.”**

**“employs a ZigBee protocol to communicate outside of the target zone”**

**CIMCON:** “adapted to transmit a ZigBee signal to the communication node”

FIG. 1



***"employs a ZigBee protocol to communicate outside of the target zone"***

**CIMCON: “adapted to transmit a ZigBee signal to the communication node”**

One variation and embodiment of the present invention involves adaptation to an existing proprietary meter reading system. In that existing system, a meter reading device within the target zone is provided with a proprietary radio that sends out an radio signal incorporating the identity of the meter reading device and the meter reading, every few seconds. The radio signal extends to the street outside of the target zone. **In the prior art implementation of the existing system, a vehicle drives by the target zone from time to time carrying a proprietary receiver that is able to receive and interpret the radio signal, thereby recovering the identity of the meter reading device and the meter reading.**

An embodiment of the present invention avoids the need for the “drive-by” reading concept of this existing technology, while preserving the value of both the installed existing transmitter and the existing receiver of the prior technology. The local node of the present invention could be provided with a radio receiver capable of picking up the radio signals produced by the already-installed adjacent proprietary transmitter radios of the existing system.

The relevant shortcomings of the ZigBee devices and RFID devices is that they have relatively **short range** and have relatively narrow bandwidth.

**'793 Patent at 5:52-54**

**'793 Patent at 14:10-49**

***“employs a ZigBee protocol to communicate outside of the target zone”***

**CIMCON:** “adapted to transmit a ZigBee signal to the communication node”

This invention involves taking the ZigBee standard to the next level, that is, integrating it with a wide-area mesh of interconnected communication nodes ideally located to communicate with low-cost, short range ZigBee or other 802.15.4 AMR/TOU meters or other local devices. By integrating the local ZigBee devices with the nodes on the wide-area mesh, the ZigBee devices can indirectly communicate over a wide area including communication with global computer networks such as the Internet.

.793 Patent at 5:55-6:3

***“employs a ZigBee protocol to communicate outside of the target zone”***

**CIMCON:** “adapted to transmit a ZigBee signal to the communication node”

Thus, one novel element of this invention is the conversion box outside the house on the light pole, that picks up the short range signals from adjacent ZigBee transmitters (or other low-power, short-range technology or networks) in or on the adjacent houses and transmits information in those signals, through a proprietary neighborhood mesh network, then through the standard municipal WiFi network, and perhaps directly through the Internet, to the monitoring center.

'793 Patent at 5:8-14.

***"employs a ZigBee protocol to communicate outside of the target zone"***

**Sunrise incorrectly asserts that “an end user device could actually communicate with a node inside the target zone and still satisfy the claim as long as the communication system also comprised a node located outside the target zone and capable of communicating with the end user device.” Sunrise Br. at 17.**

- a. the end user device within the target zone, comprising an actuator adapted to interact with the local parameter within the target zone, and a low-power-consumption communicator that has a unique communication address and is adapted to communicate with the actuator and adapted to communicate outside of the target zone using a wireless protocol, wherein the low-power-consumption communicator of the end user device employs a ZigBee protocol to communicate outside of the target zone,
- b. a communication node mounted on an upper part of a street light pole adjacent the target zone and drawing electric power from the street light pole, and adapted to communicate with the low-power consumption communicator of the end user device using the wireless protocol, and adapted to communicate with the end user, the communication node including a watchdog function that monitors an operation of the communication node and

## Group 2

Claim Term	CIMCON's Construction	Sunrise's New Construction
“actuator”	“mechanism that activates process control equipment”	No construction necessary  Alternatively: “a device capable of detecting, monitoring, or controlling a local parameter”
“interact with”	“monitor <b>and</b> control”	No construction necessary  Alternatively: “detect, monitor, <b>or</b> control”

***“actuator [adapted to] interact with [the local parameter]”***

1. A communication system that provides communication of information related to a local parameter within a target zone, between an end user device located in the target zone and an end user, comprising:
  - a. the end user device within the target zone, comprising an **actuator adapted to interact with the local parameter** within the target zone, and a low-power-consumption communicator that has a unique communication address and is adapted to communicate with the actuator and adapted to communicate outside of the target zone using a wireless protocol, wherein the low-power-consumption communicator of the end user device employs a ZigBee protocol to communicate outside of the target zone,

***“actuator [adapted to] interact with [the local parameter]”***

**CIMCON: “Actuator” should be construed as a “mechanism that activates process control equipment”**

Case 1:15-cv-11545-NMG Document 73-1 Filed 11/20/17 Page 2 of 4  
 7885 McGraw-Hill  
 A2 dictionary or  
 M37 electrical and  
 2004 computer

**McGraw-Hill**  
 Dictionary of  
**Electrical and  
 Computer  
 Engineering**

**actuator** [CONT SYN] A mechanism to activate process control equipment by use of pneumatic, hydraulic, or electronic signals. [ENG ACOUS]  
 An auxiliary external electrode used to apply a known electrostatic force to the diaphragm of a microphone for calibration purposes. Also known as electrostatic actuator. { 'ak-chə,wād·ər }

McGraw-Hill  
 New York Chicago San Francisco Lisbon London Madrid  
 Mexico City Milan New Delhi San Juan Seoul Singapore  
 Sydney Toronto

***“actuator [adapted to] interact with [the local parameter]”***

**CIMCON: “Interact with” should be construed as “monitor and control”**

The term “interact” is broader than just “activation” and thus attributes to the actuator much broader functionality than just activation of process control equipment.

Sunrise Br. at 10.

***"actuator [adapted to] interact with [the local parameter]"***

## **1 REMOTE MONITORING AND CONTROL SYSTEM**

### CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit under 35 U.S.C. §119 (e) of U.S. Provisional Application No. 60/815,551 filed Jun. 21, 2006, which is hereby incorporated by reference.

### STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

This invention has been created without the sponsorship or funding of any federally sponsored research or development program.

### FIELD OF THE INVENTION

This invention is a system for remote monitoring and control of a target zone by an end user.

### BACKGROUND OF THE INVENTION

This invention is a system for monitoring and controlling parameters, such as air conditioning, water heating, unauthorized intrusion, electric use, water use, or gas use within a target sites such as a building, by a remote end user, who might be an operator at a fuel delivery dispatch facility, or at an intrusion monitoring center, or in a municipal water headquarters. Many systems have been developed to provide data

## ***“actuator [adapted to] interact with [the local parameter]”***

In another situation, one of the only practical ways that an electric power supply company can manage delinquent accounts is to cut off the electric supply to non-paying customer's target zone until the account is paid. In some cases, the customers tend to not pay their bills repeatedly. To encourage payment of delinquent accounts, the traditional approach is for the electric power company to send a truck to physically disconnect power, and then send another truck to reconnect power when the customer pays their unpaid bill. Both of these on-site service calls are expensive to conduct and usually require expensive "on-call" capability, so that delays in conducting service do not create additional problems, such as frozen water pipes due to lack of electric heat. Furthermore, it is often not possible to pass on the high cost of these service calls directly to the involved consumer, due to regulatory, public relation, and administrative issues.

To address this problem, especially for repeat non-payers, the end user device of the present invention could include a tamper-proof switch at or near the target zone. The switch would be capable of cutting-off and restoring the electric power to the target zone. The switch could be controlled by the inexpensive end user device radio of the present invention and the communication system of the present invention, to allow the remote end user to cut-off and reestablish power remotely, instantaneously, and without a site visit.

'793 Patent at 16:63-17:20

## ***"actuator [adapted to] interact with [the local parameter]"***

Another very important use for the technology of the present invention involves the remote turning on and/or off of the supply of electric power to a target zone. There are many situations in which it is necessary and/or desirable to cut off electric power to a target zone and also turn on electric power that has been cut off. Such situations might involve safety issues such as fires or flammable leaks at the target zone. In such cases, it is sometimes desirable to cut off electric power during the safety problem, but then it is important to restore the electricity promptly once the safe condition is achieved so that collateral damage due to lack of electric power is minimized.

'793 Patent at 16:51-57

## ***"actuator [adapted to] interact with [the local parameter]"***

At the local site (e.g., a home), ZigBee sensors and switches are built into or on a network of appliances that can talk to each other, and, ideally, to a central site computer. The ZigBee technology is less expensive than Wi-Fi or Bluetooth, and can be used to monitor and adjust temperature, check whether a door is open, or closed, locked or unlocked, turn on or off appliances, or other monitoring or controlling functions within the building. Such functions might include security lighting control and monitoring motion, detecting garage door opening, flood detected, monitoring and control of electricity or other energy use, monitoring and control of heating fuel use, and other building functions.

'793 Patent at 6:20-31

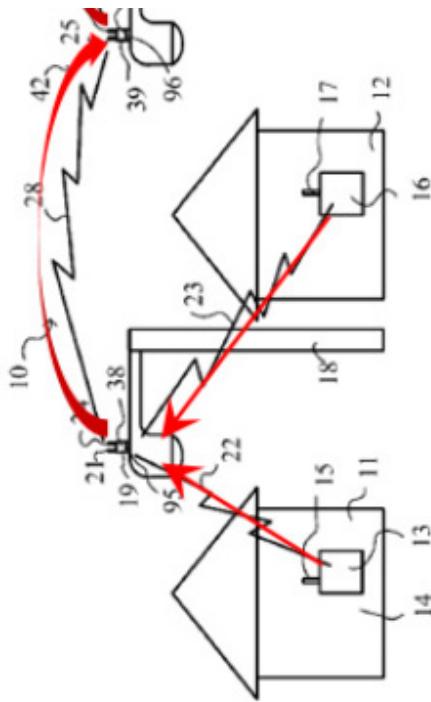
## Group 3

<i><b>Claim Term</b></i>	<i><b>CIMCON's Construction</b></i>	<i><b>Sunrise's New Construction</b></i>
“target zone”	“a physical area that does not include a street light pole”	No construction necessary Alternatively: “a physical area that contains a local parameter”
“within”	“completely inside of”	No construction necessary Alternatively: “at least partially inside”
“adjacent”	“completely outside and nearby”	No construction necessary Alternatively: “next to or adjoining”

## **“target zone” “within” and “adjacent”**

1. A communication system that provides communication of information related to a local parameter within a target zone, between an end user device located in the target zone and an end user, comprising:

- a. the end user device within the target zone, comprising an actuator adapted to interact with the local parameter within the target zone, and a low-power-consumption communicator that has a unique communication address and is adapted to communicate with the actuator and adapted to communicate outside of the target zone using a wireless protocol, wherein the low-power-consumption communicator of the end user device employs a ZigBee protocol to communicate outside of the target zone.



**“end user device” (13, 16) within  
“target zone” (11, 12)**

- b. a communication node mounted on an upper part of a street light pole adjacent the target zone and drawing electric power from the street light pole, and adapted to communicate with the low-power consumption communicator of the end user device using the wireless protocol, and adapted to communicate with the end user, the

## **“target zone”**

### **CIMCON: “Target zone” should be construed as “a physical area that does not include a street light pole”**

Nevertheless, there are many situations in which it would be desirable to provide remote monitoring and control of stationary or mobile target zones, such as buildings, yards, and vehicles of various sorts. It is common, for example, for intrusion sensors or fire alarms within a building to be hard-wired through telephone lines to a central monitoring station. When the sensors detect certain events, the sensors send a signal through the hardwired telephone lines to the central monitoring station. The station can then take appropriate action. There are, however, numerous problems with hard-wired systems, including installation expenses and vulnerability to tampering.

'793 Patent at 1:43-54

## **“target zone”**

**CIMCON: “Target zone” should be construed as “a physical area that does not include a street light pole”**

There are devices available that fit into a NEMA Locking 3 Pole Receptacle that perform communications for street light diagnostic information and other electric utility system monitoring/alarm/control information. The presently available devices use proprietary wireless platforms to transmit data through mesh networks of like devices. The transmitted data would be sent to a server for end user access. This would typically be done through telephone, fiber, WiFi, or cell phone frequency connections.

‘793 Patent at 11:22-30

**“within”**

## CIMCON: “Within” should be construed as “completely inside of”

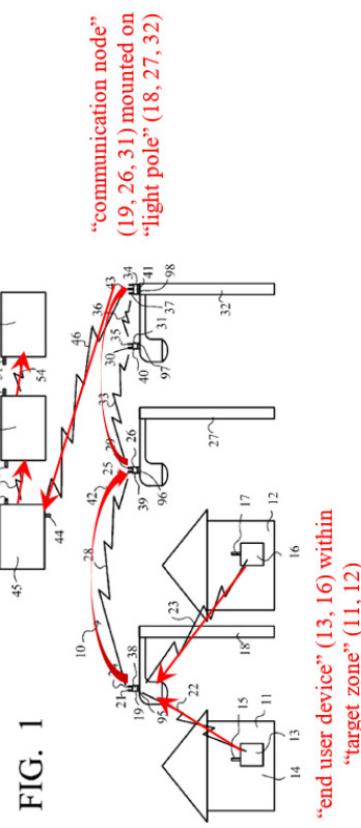
1. A communication system that provides communication of information related to a local parameter within a target zone, between an end user device located in the target zone and an end user, comprising:
  - a. the end user device **within the target zone**, comprising an actuator adapted to interact with the local parameter within the target zone, and a low-power-consumption communicator that has a unique communication address and is adapted to communicate with the actuator and **adapted to communicate outside of the target zone** using a wireless protocol, wherein the low-power-consumption communicator of the end user device employs a ZigBee protocol to communicate outside of the target zone,
  - b. a communication node mounted on an upper part of a street light pole adjacent the target zone and drawing electric power from the street light pole, and adapted to communicate with the low-power consumption communicator of the end user device using the wireless protocol, and adapted to communicate with the end user, the communication node including a watchdog function that monitors an operation of the communication node and resets the communication node if the communication node malfunctions, and the communication node providing photo control to a street light coupled to the street light pole to turn the street light on during darkness, and
    - c. the end user adapted to communicate the information with the communication node and thereby communicate the information with the end user device.

**“within”**

## CIMCON: “Within” should be construed as “completely inside of”

Referring first to FIG. 1 in which the general features of the monitoring and control system of the present invention are shown, the system designated generally as numeral 10, includes a first target zone 11, which might be a home, but also might be a warehouse, a business building, a parking lot, a storage yard, or a stationary or moving vehicle or any other stationary or mobile entity that merits monitoring and/or control. FIG. 1 also includes a second target zone 12, which might be another home. Target zone 11 contains an end-user device 13 that is capable of monitoring and/or controlling a certain parameter 14 (such as temperature, water level, water flow, cumulative water use, instantaneous or cumulative electric power use, intrusion within the target zone, etc.) in the target zone 11. End-user device 13 also includes a short-range radio

793 Patent at 6:38-51



**“adjacent”**

**CIMCON: “Adjacent” should be construed as “outside of and nearby”**

1. A communication system that provides communication of information related to a local parameter within a target zone, between an end user device located in the target zone and an end user, comprising:
  - a. the end user device **within the target zone**, comprising an actuator adapted to interact with the local parameter within the target zone, and a low-power-consumption communicator that has a unique communication address and is adapted to communicate with the actuator and **adapted to communicate outside of the target zone** using a wireless protocol, wherein the low-power-consumption communicator of the end user device employs a ZigBee protocol to communicate outside of the target zone,
  - b. a **communication node mounted on an upper part of a street light pole adjacent the target zone** and drawing electric power from the street light pole, and adapted to communicate with the low-power consumption communicator of the end user device using the wireless protocol, and adapted to communicate with the end user, the

***“adjacent”***

**CIMCON: “Adjacent” should be construed as “outside of and nearby”**

Thus, one novel element of this invention is the conversion box outside the house on the light pole, that picks up the short range signals from adjacent ZigBee transmitters (or other low-power, short-range technology or networks) in or on the adjacent houses and transmits information in those signals, through a proprietary neighborhood mesh network, then through the standard municipal WiFi network, and perhaps directly through the Internet, to the monitoring center.

‘793 Patent at 5:8-14.

**“adjacent”**

**CIMCON: “Adjacent” should be construed as “outside of and nearby”**

(57)

ABSTRACT

A communication system that provides communication of information between an end user device and a remote end user. The system includes a communication node mounted on the upper part of a utility pole, and drawing its power from the utility pole through a standard NEMA Locking 3 Pole Receptacle, and adapted to communicate with a nearby user device using the low-power communication protocol, such as the ZigBee protocol (ANSI IEEE 802.15.4) or Radio Frequency Identification Device (RFID) technology, and also adapted to communicate with a neighborhood mesh network of nodes mounted on utility poles. The neighborhood mesh network is capable of communicating, through a regional computer network, with the remote end user.

‘793 Patent at Abstract

***“adjacent”***

**CIMCON: “Adjacent” should be construed as “outside of and nearby”**

The relevant shortcomings of the ZigBee devices and RFID devices is that they have relatively **short range** and have relatively narrow bandwidth.

'793 Patent at 5:52-54

***“adjacent”***

**CIMCON: “Adjacent” should be construed as “outside of and nearby”**

CIMCON’s proposed construction does not foreclose a “target zone” that “adjoins” the area “outside of” the target zone. Thus, CIMCON would alternatively stipulate to a construction of “completely outside of and either next to or adjoining.”

**Group 4****Claim Term****“end user”****CIMCON’s Construction****Sunrise’s New Construction****“person”****No construction necessary**

Alternatively: “an entity monitoring or controlling a local parameter through a system comprising end user devices”

“end user adapted to communicate”  
Indefinite.

**No construction necessary**

Alternatively: “an entity monitoring or controlling a local parameter through a system comprising end user devices capable of communicating”

***“end user”***

**CIMCON: “End user” should be construed as “person”**

DETAILED DESCRIPTION OF THE INVENTION

This invention is a combination and interconnection of two existing technologies; mesh networks, and low-power, low-cost transceivers. **The invention allows a person (an “end user” such as a city electrical worker) to monitor and/or control certain events (such as municipal electrical use) that are occurring in a remote location (such as any particular house), with an end user device (such as a domestic electrical use meter and associated communications device).**

‘793 Patent at 4:33-43

***“end user”***

**CIMCON: “End user” should be construed as “person”**

quarters. Many systems have been developed to provide data communication between target sites and the remote end user, from the simplest form of a visit by the end user or his representative to the target site, such as a meter reader, to sophisticated direct microwave communication links, and many variations in between. In many cases, however, the

‘793 Patent at 1:31-36

***“end user”***

**CIMCON: “End user” should be construed as “person”**

street in front of the house. In existing technology, a utility vehicle provided with an appropriate unit can pick up the signal as the vehicle passes by the house and thereby measures the electrical use of the house for appropriate billing. This system of monitoring the activities within a building is much more efficient than sending around traditional human meter readers that must enter each individual dwelling or contact outside transponders with a reading device.

'793 Patent at 4:28-36

**“end user”**

**CIMCON: “End user” should be construed as “person”**



**us·er /yōōzər/ ▶ n. 1** a person who uses or operates something, esp. a computer or other machine. ■ a person who takes illegal drugs; a drug user: *the drug causes long-term brain damage in users | a heroin user.* ■ a person who manipulates others for personal gain: *he was a gifted user of other people.*

2 Law the continued use or enjoyment of a right.

## ***"end user adapted to communicate"***

**CIMCON: "End user [i.e. person] adapted to communicate" is indefinite.**

<p>(Slip Opinion)</p> <p>OCTOBER TERM, 2013</p> <p>1</p> <p>NOTE: Where it is feasible, a syllabus (headnotes) will be published, at a time in connection with this case, at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See United States v. Detroit Timber &amp; Lumber Co., 200 U. S. 321, 337.</p> <p>SUPREME COURT OF THE UNITED STATES</p> <p>Syllabus</p> <p>NAUTILUS, INC. v. BIOSIG INSTRUMENTS, INC.</p> <p>CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT</p> <p>No. 13-369. Argued April 28, 2014—Decided June 2, 2014</p> <p>The Patent Act requires that a patent specification "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention." 35 U. S. C. §112, 1/2. This case concerns the proper reading of the statute's clarity and precision demand.</p> <p>Assigned to respondent Biosig Instruments, Inc., the patent in dispute (the '753 patent) involves a heart-rate monitor used with exercise equipment. Prior heart-rate monitors, the patent asserts, were often inaccurate in measuring the electrical signals accompanying each heartbeat (electrocardiograph or ECG signals) because of the presence of other electrical signals (electromyogram or EMG signals), generated by the user's skeletal muscles, that can impede ECG signal detection. The invention claims to improve on prior art by detecting and processing ECG signals in a way that filters out the EMG interference.</p> <p>Claim 1 of the '753 patent, which contains the limitations critical to this dispute, refers to a "heart rate monitor for use by a user in association with exercise apparatus and/or exercise procedures." The claim "comprise[s]" among other elements, a cylindrical bar fitted with a display device; "electronic circuitry including a difference amplifier"; and, on each half of the cylindrical bar, a "live" electrode and a "common" electrode "mounted . . . in spaced relationship with each other."</p> <p>Biosig filed this patent infringement suit, alleging that Nautilus, Inc., without obtaining a license, sold exercise machines containing Biosig's patented technology. The District Court, after conducting a hearing to determine the proper construction of the patent's claims, granted Nautilus' motion for summary judgment on the ground that</p>
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"[W]e hold that a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with **reasonable certainty**, those skilled in the art about the scope of the invention."

*Nautilus, Inc. v. Biosig Instruments, Inc.*,  
134 S. Ct. 2120, 2124 (2014)

## ***“end user adapted to communicate”***

### **CIMCON: “End user [i.e. person] adapted to communicate” is indefinite.**

- “[I]ndefiniteness is a question of law and in effect part of claim construction.” *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012).